Third
Five-Year Review Report

Aidex Corporation Site
Mills County, Iowa

EPA ID: IAD04251256

January 2004

Prepared for:
U.S. Environmental Protection Agency
Region VII
901 North 5th Street
Kansas City, Kansas 66101

Prepared by:
Black & Veatch Special Projects Corp.
6601 College Blvd.
Overland Park, Kansas 66211

Approved by:

Cecilia Tapia, Director
Superfund Division

Date: 1/30/04

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Abbreviations and Acronyms

ARAR	Applicable or relevant and appropriate requirements
BVSPC	Black & Veatch Special Projects Corp.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
EE/CA	engineering evaluation/cost analysis
ESD	Explanation of Significant Difference
FS	feasibility study
IDNR	Iowa Department of Natural Resources
IRM	initial remedial measure
MCL	maximum contaminant level
NA	not applicable
NCP	National Contingency Plan
ND	not detected
NPL	National Priorities List
NR	not reported
NS	not sampled
ppm	parts per million
RAC	Response Action Contract
RAO	remedial action objective
RI	remedial investigation
ROD	Record of Decision
RPM	Remedial Project Manager
USEPA	U.S. Environmental Protection Agency

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Five-Year Review Summary Form

SITE IDENTIFICATION

Site name *(from WasteLAN)*: Aidex Corporation Site

EPA ID *(from WasteLAN)*: IAD04251256

Region: 7	**State:** IA	**City/County:** Council Bluffs/Mills County

SITE STATUS

NPL status: ☐ Final ☒ Deleted ☐ Other (specify)_____

Remediation status (choose all that apply). ☐ Under Construction ☐ Operating ☒ Complete

Multiple OUs?* ☒ YES ☐ NO	**Construction completion date:** 05/12/1987

Has site been put into reuse? ☒ YES ☐ NO

REVIEW STATUS

Lead agency: ☒ EPA ☐ State ☐ Tribe ☐ Other Federal Agency _____

Author name: Genise M. Luecke

Author title: Site Manager	**Author affiliation:** Black & Veatch

Review period:** 09/01/2003 to 12/31/2003

Date(s) of site inspection: 10/15/2003 and 10/16/2003

Type of review:

☐ Post-SARA ☒ Pre-SARA ☐ NPL-Removal only
☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead
☐ Regional Discretion

Review number: ☐ 1 (first) ☐ 2 (second) ☒ 3 (third) ☐ Other (specify) _____

Triggering action:

☐ Actual RA Onsite Construction at OU #____ ☐ Actual RA Start at OU#____
☐ Construction Completion ☒ Previous Five-Year Review Report
☐ Other (specify) _____

Triggering action date *(from WasteLAN)*: 04/06/1998

Due date *(five years after triggering action date)*: 04/06/2003

* ["OU" refers to operable unit]
** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN]

Five-Year Review Summary Form, cont'd.

Issues:

No issues were identified

Recommendations and Follow-up Actions:

It is recommended that the groundwater monitoring conducted by IDNR be discontinued and that this be the last five-year review conducted at the site Atrazine concentrations in the groundwater have been below MCLs since 1999. The remedial action objectives of the ROD and ESD have been met

Protectiveness Statement(s):

Because the remedial actions are protective, the site is protective of human health and the environment. The groundwater concentrations have reduced to below the MCL for Atrazine

Other Comments:

None

Executive Summary

The Aidex Corporation site is located in rural Mills County, Iowa, approximately 7 miles south of Council Bluffs, Iowa. The site occupies approximately 20 acres and the land use is industrial. The surrounding land use is mainly agricultural. The site contains four main buildings totaling 66,000 square feet.

The final remedy for the Aidex site included excavation of offsite disposal of buried wastes and contaminated soil, cleaning of the onsite buildings, installation of additional groundwater monitoring wells and periodic monitoring. Annual groundwater monitoring has been conducted by the Iowa Department of Natural Resources (IDNR) since 1991.

The first five-year review of the remedies at the site was completed in June 1993. The second five-year review was completed in April 1998. Both previous five-year reviews concluded that the site remedy remained protective of human health and the environment. The site was deleted from the National Priorities List (NPL) on October 21, 1993. In 2002, the state of Iowa reclassified the site on the State *Registry of Hazardous Waste or Hazardous Substances Disposal Sites* as "No Further Action Required, Site Properly Closed, No evidence of Present or Potential Adverse Impact". The site will be removed from the State Registry in 2003.

The assessment of this, the third, five-year review found that the remedies continue to be protective. The immediate threats have been addressed and the remedies remain protective of human health and the environment. Review of the analytical data from the annual groundwater monitoring effort indicate that remedial action objectives (RAOs) identified in the Record of Decision (ROD) and Explanation of Significant Difference (ESD) have been achieved. Specifically, the groundwater contamination levels have decreased to below the maximum contaminant levels (MCLs). The groundwater contaminant levels have remained below MCLs for over 5 years.

It is recommended that the annual groundwater monitoring and the five-year reviews be discontinued.

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1.0 Introduction

The purpose of the five-year review is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of the reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and identify recommendations to address them.

The Agency is preparing this Five-Year Review report pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) § 121 and the National Contingency Plan (NCP). CERCLA § 121 states:

> *If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after initiation of remedial action to assure that human health and the environment are being protected by the remedial action being implemented In addition, if upon such review it is the judgement of the President that action is appropriate at such a site in accordance with section [104] or [106], the President shall take or require such action The President shall report to Congress a list of facilities for which such review is required, the results of such reviews, and any actions taken as a result of such reviews.*

The Agency interpreted this requirement further in the NCP; 40 Code of Federal Regulations (CFR) §300.430(f)(4)(ii) states:

> *If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

The U.S. Environmental Protection Agency (USEPA) Region VII has conducted a five-year review of the remedial actions implemented at the Aidex Corporation site in Mills County, Iowa. This review was conducted by USEPA for the entire site from September 2003 through November 2003 USEPA's contractor, Black & Veatch Special Projects Corp (BVSPC), under a Response Action Contract (RAC) provided assistance to USEPA during the five-year review. This report documents the results of the review.

This is the third five-year review for the site. The first five-year review was completed by USEPA Region VII in June 1993. The second five-year review was completed by

USEPA Region VII in April 1998. The triggering action for this third statutory review is the completion of the previous five-year review. The five-year review is required because hazardous substances, pollutants, or contaminants remained at the site above levels that allowed for unlimited use and unrestricted exposure.

2.0 Site Chronology

Table 2-1 presents a summary of the major site events and relevant dates in the site chronology.

Table 2-1
Chronology of Site Events

Event	Date
Site discovery following fire in 1976 and subsequent abandonment of the property by owner.	1980
Preliminary assessment completed.	05/01/1980
Site inspection completed.	12/01/1981
Initial remedial measure (IRM) consisting of collection, bulking, and disposal of pesticide-contaminated solids, liquids, and sludges, was initiated.	08/27/1982
Site proposed for the National Priorities List (NPL).	12/30/1982
Record of Decision (ROD) to implement the IRM was signed.	08/24/1983
Final listing on the NPL.	09/08/1983
IRM completed.	04/15/1984
Combined remedial investigation/feasibility study (RI/FS) completed.	09/30/1984
ROD selecting final remedy signed.	09/30/1984
Remedial design completed.	04/21/1986
Remedial action consisting of removal of contaminated soils, cleaning of the buildings, and installation of additional monitoring wells was initiated.	05/08/1986
Remedial action completed.	05/12/1987
Engineering Evaluation/Cost Analysis (EE/CA) was prepared to determine appropriate further action for the buildings.	11/1990
No further action for the buildings was initiated based on results of indoor air samples.	1991
Explanation of Significant Difference (ESD) outlining USEPA's decision of no further action for the groundwater.	09/1991
The first Five-Year Review was completed.	06/08/1993
Site deleted from the NPL.	10/21/1993
The second Five-Year Review was completed.	04/06/1998
Reclassified on the State *Registry of Hazardous Waste or Hazardous Substances Disposal Sites* as "No Further Action Required, Site Properly Closed, No evidence of Present or Potential Adverse Impact".	2002

3.0 Background

The Aidex Corporation site is located in rural Mills County, Iowa, about 7 miles south-southeast of Council Bluffs. This section presents site background information including descriptions of the site physical characteristics, land use, and past response actions.

3.1 Physical Characteristics

The site occupies approximately 20 acres near the Missouri River floodplain. The Missouri River is approximately 3 miles west of the site. The property is bounded on the west by St. Mary's drainage ditch (the major drainage ditch in this part of the flood plain), on the north and east by county roads, and on the south by cultivated farm fields. A vicinity map showing the general location of the site is included in Attachment 1.

3.2 Land and Resource Use

The land use for the site is industrial. The land use of the surrounding area is agricultural. The site contains four main buildings totaling approximately 66,000 square feet. The land use for the site and surrounding areas has not changed significantly since the RODs were issued.

3.3 History of Contamination

As a formulator of various organochlorine, organophosphate, and triazine pesticide compounds, Aidex received bulk quantities of concentrated pesticides from 1974 to 1981. To create salable products, Aidex mixed the pesticides with various inert materials, solvents, oils, synergists, and perfumes.

Spills of technical grade pesticides during transfer of the materials from tank cars to formulation equipment and the procedures used by Aidex for handling, storage, and disposal of process wastes resulted in the release of at least 16 pesticide compounds in the environment. Liquid process wastes were stored in an underground storage tank that leaked. Dry solid pesticide wastes were stored onsite in stacks of open and/or badly deteriorated drums and were buried un two unlined trenches.

In November 1976, a fire destroyed the liquid formulation building at the facility. Pesticides were spread by the estimated 100,000 gallons of water used to fight the plant fire, contaminating drainage ways and property. During a July 1981 bankruptcy sale held at the site to liquidate the assets of Aidex, ethoprop (Mocap) dust was spilled when a baghouse dust collector was removed. This spill resulted in two workmen being hospitalized with

organophosphate poisoning. It was also noted that two large metal tanks were drained into a concrete-lined pit at the site of the former atrazine formulation building. These two incidents were believed to be contributing factors to the contaminated conditions at the site.

3.4 Initial Responses

A remedial investigation/feasibility study (RI/FS) was performed by the USEPA between 1982 and 1984. During the RI/FS, an initial remedial measure (IRM) was conducted to remove some immediate hazards associated with pesticide contamination. The IRM, completed in 1984, consisted of onsite collection, bulking, and temporary staging of pesticide-contaminated solids, liquids, and sludges; construction of an interceptor drainage ditch around a portion of the site; decontamination of an underground tank and the basement remains of the building destroyed by fire; and offsite transport and disposal of bulk liquid wastes and staged solid waste materials.

3.5 Basis for Taking Action

The principal threats posed by the site were direct contact (ingestion, inhalation, and dermal) by humans and wildlife with pesticide-contaminated soil and wastes located at the site. The pesticide-contaminated solids, liquids, and sludges were also a source for continued groundwater contamination.

4.0 Remedial Actions

A remedial action at the site was initiated in 1986 and consisted of offsite disposal of contaminated soils exceeding 10 parts per million (ppm) total pesticides and backfilling with clean fill, cleanup of the four onsite buildings and a batching pit, installation of additional groundwater monitoring wells, and initiation of groundwater monitoring. Annual groundwater has been conducted by the Iowa Department of Natural Resources (IDNR) since 1990.

4.1 Interim Remedial Measures Remedy Selection

A Record of Decision (ROD) for the Aidex site was signed on August 24, 1983, which chose IRM for the site. The ROD selected an IRM based on a review of the effectiveness, technical feasibility, cost effectiveness, environmental considerations, and implementation time frame. The purpose of the IRM was to address the three most significantly contaminated segments of the hazardous wastes at the Aidex site including the contaminated liquids, the contaminated sludges, and the highly contaminated soil beneath the drum stacks. The ROD selected the appropriate disposal method for the wastes collected and staged at the site.

The major components of the IRM included the following:

- Offsite disposal of liquid wastes by deep well injection.
- Offsite disposal of solids and solidified liquids by incineration and landfilling.

The IRM activities were completed in 1984.

4.2 Final Remedy Selection

A second ROD for the Aidex site was signed on September 30, 1984, which selected the final remedy for the site. The ROD selected a remedy based on a review of the effectiveness, technical feasibility, cost effectiveness, and impact to the environment. The goal of the remedy was to provide adequate protection for human health and the environment from exposure to buried wastes, contaminated soils, contaminated groundwater, and contaminated structures in a cost effective manner.

The major components of the selected remedy included the following:

- Excavation and offsite disposal in a landfill of buried wastes and contaminated soil.
- Thorough cleaning of the buildings including vacuuming and washing the floors and walls.
- Installation of additional groundwater monitoring wells and periodic monitoring.

The remedial action was initiated in 1986 and construction activities were completed in 1987.

4.3 Post Remedial Action Activities

4.3.1 Buildings

Based on sampling of the building interiors conducted in 1987 and 1988, an engineering evaluation/cost analysis (EE/CA) was prepared to evaluate additional cleaning of the buildings. Based on the results of the EE/CA, interior air sampling was completed and it was determined that no significant risks were posed by residual contamination in the buildings. Therefore, no additional responses actions were implemented on the buildings at the Aidex site.

4.3.2 Groundwater Monitoring

In May 1990, IDNR prepared a report assessing the groundwater at the Aidex site. The report recommended modification to the groundwater monitoring plan. The revised groundwater monitoring plan includes sampling twelve wells annually for herbicides and two additional wells every 3 years. IDNR has been conducting the annual groundwater monitoring.

In September 1991, an Explanation of Significant Difference (ESD) was prepared by USEPA outlining the decision to pursue no further action for the groundwater at the site. The no further action decision was based on the low levels of contamination present at the site not presenting any significant risks.

5.0 Progress Since Last Five-Year Review

The second five-year review (April 1998) determined that the response actions at the site continued to protect human health, welfare, and the environment at the site. The second five-year review recommended that groundwater monitoring continue until Atrazine levels in the groundwater decreased to below the MCL. IDNR has continued to perform the annual groundwater monitoring except that no monitoring was conducted in 2002.

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6.0 Five-Year Review Process

6.1 Administrative Components

IDNR was notified of the initiation of the five-year review in August 2003. The Aidex site five-year review team was led by Victor Lyke of USEPA, the Remedial Project Manager (RPM) for the site. The five-year review site inspection was conducted by USEPA's contractor, BVSPC. The BVSPC team was lead by Genise Luecke, Site Manager.

A schedule was developed for the five-year review extending through December 31, 2003, which included the following components:

- Document Review.
- Data Review.
- Site Inspection.
- Site Interviews.
- Five-Year Review Report Development and Review.

6.2 Community Notification and Involvement

A fact sheet announcing the five-year review for the Aidex site was developed in December 2003. The fact sheet was made available on the USEPA's web site and notices were published in the Council Bluffs Daily Nonpareil on December 7, 2003; the Town & Country Shopper on December 9, 2003; and the Glenwood Opinion Tribune on December 10, 2003.

6.3 Document Review

This five-year review consisted of a review of relevant documents including monitoring data for the site. A complete list of documents reviewed as part of the five-year review process is included in Attachment 2. Applicable cleanup standards were reviewed. The results of this review are listed in Attachment 3.

6.4 Data Review

Groundwater at the Aidex site has been monitored since 1982. The State of Iowa has conducted annual monitoring of the groundwater quality at the site since 1990. In addition, as part of this five-year review site inspection, split samples were collected from all the monitoring wells included in IDNR's annual monitoring effort. Split samples were collected in accordance with the Field Sampling Plan and Quality Assurance Project Plan prepared by BVSPC for the site, dated September 23, 2003. Table 6-1 presents a summary of the analytical data from the 2003 annual monitoring event including the split sample results.

Table 6-1
2003 Annual Groundwater Monitoring Results

Well	Compound			
	Atrazine	Ametryn	Prometon	Propazine
MW-1	0 2 U / 0 1 U	0.2 U / NR	0 2 U / NR	0 2 U / NR
MW-2	0.91 J / 1 7	0.2 U / 0 20	0 25 J / 0 47	0 32 J / 0 54
MW-3	0 2 U / 0 19	0.2 U / NR	0 2 U / 0.12	0 2 U / NR
MW-4	0.2 U / 0 1	0 2 U / NR	0 2 U / 0 13	0 2 U / NR
IGS-1A	0 2 U / 0.1 U	0.2 U / NR	0 2 U / NR	0 2 U / NR
ADX-14	0 2 U / 0 1 U	0.2 U / NR	0.2 U / NR	0 2 U / NR
ADX-15	0 2 U / 0 20	0.2 U / NR	0 2 U / 0 10	0 2 U / NR
ADX-17	0 2 U / 0 1 U	0.2 U / NR	0.2 U / NR	0 2 U / NR
ADX-19	0.2 U / 0 1 U	0 2 U / NR	0.2 U / NR	0 2 U / NR
ADX-20	0.2 U / 0 1 U	0.2 U / NR	0 2 U / NR	0 2 U / NR
ADX-21	0 2 U / 0 1 U	0 2 U / NR	0 2 U / NR	0 2 U / NR
ADX-22	0.2 U / 0 1 U	0.2 U / NR	0 2 U / NR	0 2 U / NR
ADX-23	0 2 U / 0 1 U	0 2 U / NR	0 2 U / NR	0 2 U / NR
ADX-26	0.2 U / 0 1 U	0 2 U / NR	0.2 U / NR	0 2 U / NR
ADX-27	0.2 U / 0 1 U	0 2 U / NR	0.2 U / NR	0 2 U / NR
MCL	3	NA	NA	NA

Notes:
USEPA result is listed first IDNR result is listed second
Only compounds detected at least once are listed. Complete analytical results are provided in Attachment 4.
All values are in ug/L
U - Not detected above reporting limit listed.
J - The identification of the analyte is acceptable, the reported value is an estimate
NA - Not applicable.
NR - Analytical result for compound not reported

Table 6-2 presents a summary of the historical analytical results for Atrazine from the groundwater monitoring efforts since 1993. Based on a review of the available data, it appears that the Atrazine levels in the groundwater wells monitored have reduced to below the MCL of 3 ug/L.

6.5 Site Inspection

A site inspection was conducted on October 15 and 16, 2003, by the BVSPC Site Manager. The site inspection was also attended by Bob Drustrup and Matt Culp with IDNR. The purpose of the site inspection was to assess the protectiveness of the remedies. As part of the site inspection, split samples were collected from all of the groundwater wells sampled by IDNR as part of the annual groundwater monitoring. The analytical results of the split sampling effort are presented in Section 6.4.

Based on a review of the data and the data validation information provided by the USEPA Region 7 Laboratory, the split sampling data is of acceptable quality. The USEPA split sample results correlate well with the IDNR analytical results as shown on Table 6-3. The percent difference values are all within the specified value of 80 percent set in the Quality Assurance Project Plan prepared for the October 2003 split sampling effort prepared by BVSPC, dated September 23, 2003.

6.6 Interviews

Interviews were conducted with various parties connected to the site. Mr. Bod Drustrup with IDNR indicated that the state of Iowa no longer considered the site a threat. Mr. Drustrup indicated that the State would be in favor of discontinuing the annual monitoring and five-year reviews.

Table 6-2
Summary of Historical Atrazine Concentrations

Monitoring Well	Sampling Date									
	May 1993	July 1994	June 1995	May 1996	June 1997	July 1998	June 1999	June 2000	Nov. 2001	Oct. 2003
MW-1	0 1 U	NS	NS	0 1 U	0.1 U	0.14	NS	NS	0 1 U	0.2 U
MW-2	**75**	**290**	**86**	**69**	**38**	**6.9**	2 4	2.2	2.2	0.91 J
MW-3	2.5	2.1	2 6	1 6	0.89	0.5	0.25	0 28	NS	0.2 U
MW-4	1 2	1.4	0 92	2 U	0.54	0.58	0.37	0.27	0.16	0.2 U
MW-5*	**3.9**	2.9	NS	NS	NS	NS	NS	NS	NS	NS
IGS-1A	NS	NS	0 1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0 1 U	0.2 U
ADX-14	0.11	0 11	0.1 U	0.1 U	0.1 U	NS	0.1 U	0.1 U	0.1 U	0.2 U
ADX-15	**3.9**	1.3	**5.1**	2.4	0.98	0.93	0.1 U	0.73	0.92	0 2 U
ADX-17	NS	NS	0.1 U	NS	NS	0.1 U	NS	NS	NS	0.2 U
ADX-19	NS	NS	0.1 U	NS	NS	0.1 U	NS	NS	NS	0.2 U
ADX-20	0.1 U	0.1 U	NS	0 1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0 2 U
ADX-21	0.1 U	0.1 U	0 1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
ADX-22	0.89	1.3	0.61	0 49	0.32	0.32	0.1 U	0 16	NS	0 2 U
ADX-23	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
ADX-26	0.1 U	0 1 U	0 1 U	0.1 U	0.1 U	0.11	0.1 U	0 1 U	0 1 U	0.2 U
ADX-27	0.1 U	0.1 U	0.1 U	0 1 U	0.1 U	NS	0.1 U	0 1 U	NS	0.2 U

Notes:
All concentrations are in ug/L.
U - Atrazine was not detected above the quantification limit listed.
J - The identification of the analyte is acceptable; the reported value is an estimate.
NS - Well was not sampled or sample was broken during shipment.
MW-5 was abandoned and replaced in the monitoring program by IGS-1A in 1995.
USEPA analytical results are listed for the October 2003 sampling date See Table 6-1 for IDNR's 2003 analytical results.
Bold indicates concentrations of Atrazine above the MCL of 3 ug/L.

Table 6-3
Comparison of USEPA Split Sample Data to IDNR Data
October 2003 Sampling Event

Well	Analyte	USEPA Result	IDNR Result	Percent Difference
MW-2	Atrazine	0.91	1.7	30.27
MW-2	Prometon	0.25	0 47	30.56
MW-2	Propazine	0.32	0.54	25.58
Only analytes which were detected in both the USEPA and IDNR samples are listed. The USEPA results listed were all J-coded.				

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7.0 Technical Assessment

7.1 *Question A: Is the remedy functioning as intended by the decision documents?*

Review of documents, applicable or relevant and appropriate requirements (ARARs), risk assumptions, and the results of the site inspection indicate that the remedies for the site are functioning as intended by the RODs and ESD. Analytical results from the annual groundwater monitoring indicate that the Atrazine levels have decreased to less than the MCL.

7.2 *Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?*

There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedies. The ARAR for Atrazine, an MCL of 3 ug/L, has been met in the groundwater for the past 5 years.

7.3 *Question C: Has any other information come to light that could call into question the protectiveness of the remedy?*

No new ecological targets have been identified at the site. No events have occurred within the last 5 years that would effect the protectiveness of the remedies. There is no other information that calls into question the protectiveness of the remedies.

7.4 Technical Assessment Summary

According to the data reviewed, the site inspection, and the interviews, the remedies are functioning as intended by the ROD and ESD. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedies. The groundwater levels of Atrazine have been less than the MCL for the past 5 years.

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8.0 Issues

There were no major issues identified during the five-year review that effect the protectiveness of the remedies.

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9.0 Recommendations and Follow-Up Actions

It is recommended that the groundwater monitoring conducted by IDNR be discontinued and that this be the last five-year review conducted at the site. Atrazine concentrations in the groundwater have been less than the MCL since 1999. The remedial action objectives of the RODs and ESD have been met.

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10.0 Protectiveness Statement

Because the remedial actions are protective, the site is protective of human health and the environment. The groundwater concentrations of Atrazine have decreased to less than the MCL and remained below the MCL for the past 5 years.

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11.0 Next Review

No additional five-year reviews are recommended for the site. All the remedial actions are complete. The concentrations of Atrazine in the groundwater have decreased to less than the MCL and have remained below the MCL since 1999. The state of Iowa has reclassified the site on the State *Registry of Hazardous Waste or Hazardous Substances Disposal Sites* as "No Further Action Required, Site Properly Closed, No evidence of Present or Potential Adverse Impact". The site will be removed from the State Registry in 2003.

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Attachment 1
Site Figures

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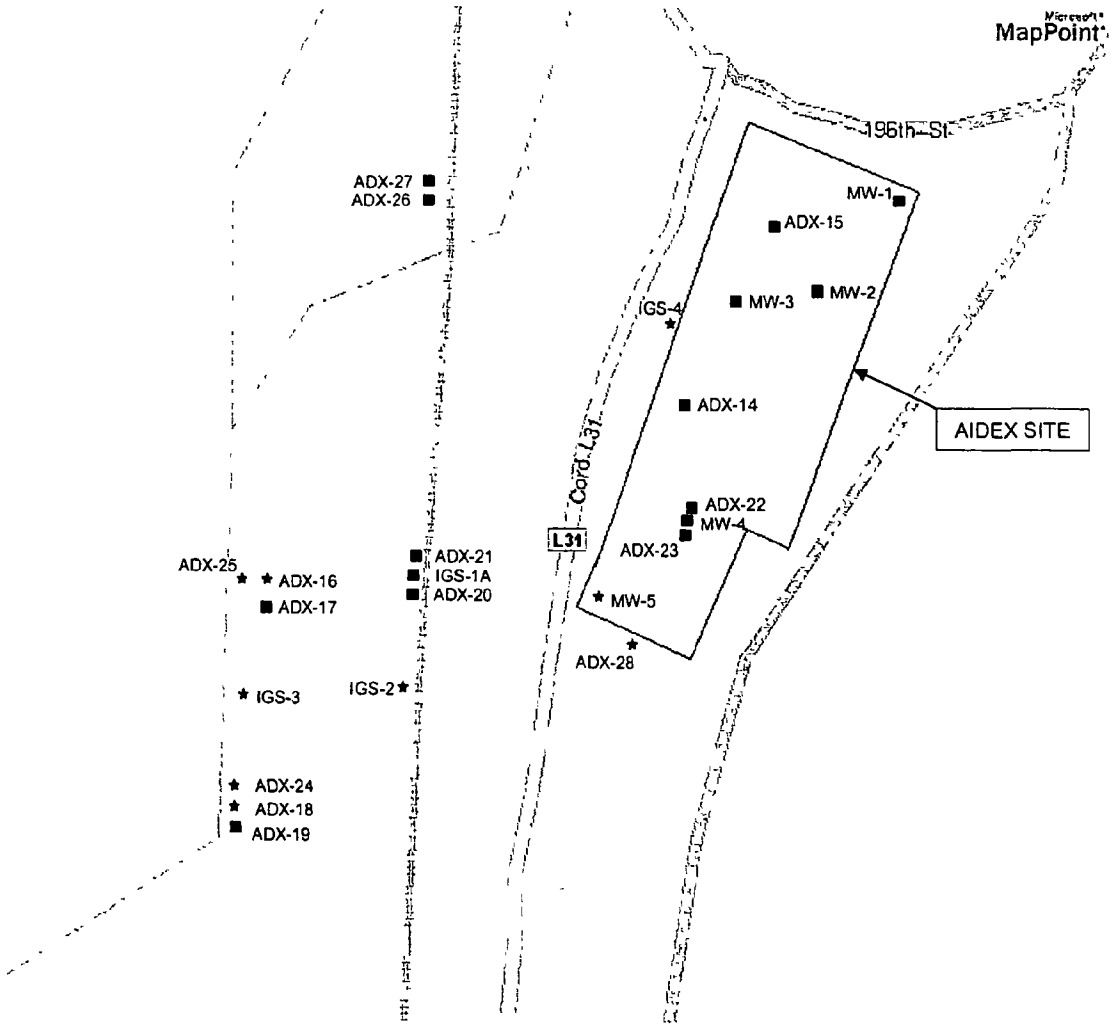

NOT TO SCALE

LEGEND

■ MW-1 MONITORING WELL INCLUDED IN ANNUAL MONITORING

★ ADX-28 MONITORING WELL NOT INCLUDED IN ANNUAL MONITORING

NORTH

FIGURE
MONITORING WELL LOCATIONS
AIDEX SITE

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Attachment 2
Site Documents Reviewed

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Site Documents Reviewed
Aidex Corp. Site
Third Five-Year Review

IDNR, Workplan for Groundwater Sampling of the Aidex Corporation Site, Mills County, Iowa, May 29-30, 1991.

IDNR, Annual Groundwater Monitoring Data, July 1998, June 1999, June 2000, and November 2001.

IDNR, Addendum to May 1991 Workplan for Groundwater Sampling, Aidex Corporation Site, Mills County, Iowa, for October 2003 Sampling.

USEPA, Record of Decision, Aidex Corp., Operable Unit 2, Council Bluffs, Iowa, August 24, 1983.

USEPA, Record of Decision, Aidex Corp., Operable Unit 1, Council Bluffs, Iowa, September 30, 1984.

USEPA, Explanation of Significant Differences, Aidex Site, September 10, 1991.

USEPA, Superfund Site Final Closeout Report, Aidex Corporation Site, Council Bluffs, Iowa, June 1992.

USEPA, Memorandum, Notice of Intent to Delet, AidexCorporation Superfund Site, Glenwwod, Iowa, May 11, 1993.

USEPA, Five-Year Review Report, Aidex Corporation Site, Council Bluffs, Iowa, June 8, 1993.

USEPA, Five-Year Review Report for the Aidex Corporation Site, Council Bluffs, Iowa, April 6, 1998.

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Attachment 3
Applicable or Relevant and Appropriate Requirements

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ARARs Review

At the time the RODs were prepared for the Aidex site, there were no specific criteria for identification of applicable or relevant and appropriate requirements (ARARs). In the second five-year review, two very similar ARARs were identified that impacted the conditions and future activities at the Aidex site. These two ARARs are:

- The federal MCL for Atrazine of 3 ug/L.
- State groundwater action level for Atrazine of 3 ug/L (Iowa Administrative Code [567], Chapter 133: Rules for Determining Cleanup Actions and Responsible Parties).

A review of the current standards show that the above ARARs have not changed since the second five-year review was conducted in 1998.

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Attachment 4
2003 Split Sampling Groundwater Data
(USEPA and IDNR Data)

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United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, KS 66101

Date: 11/14/2003

Subject: Transmittal of Sample Analysis Results for ASR #: 2178

Project ID: VL0706

Project Description: Aidex Site split sampling

From: Dale I. Bates, Director
Regional Laboratory, Environmental Services Division

To: Victor Lyke
SUPR/FFSE

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition memo for this ASR.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Victor Lyke **Org:** SUPR/FFSE **Phone:** 913-551-7256
Project ID: VL0706
Project Desc: Aidex Site split sampling
Location: **State:** Iowa **Program:** Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00
Purpose: Site Characterization

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample

Units: Specific units in which results are reported.

ug/L = Micrograms per Liter

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank)= Values have been reviewed and found acceptable for use.
J = The identification of the analyte is acceptable; the reported value is an estimate.
U = The analyte was not detected at or above the reporting limit.

ASR Number: 2178 **Sample Information Summary** **11/14/2003**

Project ID: VL0706 **Project Desc:** Aidex Site split sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 - __		Water	Well ADX-19	101503-ADX-19	10/15/2003	09:47			10/17/2003
2 - __		Water	ADX-17	101503-ADX-17	10/15/2003	11 30			10/17/2003
3 - __		Water	ADX-20	101503-ADX-20	10/15/2003	13.25			10/17/2003
4 - __		Water	ADX-21	101503-ADX-21	10/15/2003	13:35			10/17/2003
5 - __		Water	IGS-1A	101503-IGS-1A	10/15/2003	13:48			10/17/2003
6 - __		Water	ADX-26	101503-ADX-26	10/15/2003	14:30			10/17/2003
7 - __		Water	ADX-27	101503-ADX-27	10/15/2003	14:45			10/17/2003
8 - __		Water	MW-4	101503-MW-4	10/15/2003	15 35			10/17/2003
9 - __		Water	ADX-22	101503-ADX-22	10/15/2003	15:40			10/17/2003
10 - __		Water	ADX-23	101503-ADX-23	10/15/2003	15:25			10/17/2003
11 - __		Water	MW-1	101503-MW-1	10/15/2003	16 00			10/17/2003
12 - __		Water	ADX-15	101603-ADX-15	10/16/2003	08:15			10/17/2003
13 - __		Water	MW-3	101603-MW-3	10/16/2003	09:00			10/17/2003
14 - __		Water	MW-2	101603-MW-2	10/16/2003	09:30			10/17/2003
15 - __		Water	ADX-14	101603-ADX-14	10/16/2003	09:40			10/17/2003

ASR Number:2178 **RLAB Approved Analysis Comments** **11/14/2003**

Project ID: VL0706 **Project Desc:** Aidex Site split sampling

Analysis	Comments About Results For This Analysis

1 Triazine Herbicides in Water by GC/NPD

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3250.4C

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 7-__
8-__ 9-__ 10-__ 11-__ 12-__ 13-__ 14-__
15-__

Comments:

Atrazine, Prometon, and Propazine were J-coded in sample 2178-14. Although these analytes in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to the surrogate recovery not meeting specifications. The actual concentration for this analyte may be as much as 100% higher than the reported value.

ASR Number: 2178 **RLAB Approved Sample Analysis Results** **11/14/2003**

Project ID: VL0706 **Project Desc:** Aidex Site split sampling

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1 Triazine Herbicides in Water by GC/NPD					
Alachlor	ug/L	0.20 U	0 20 U	0 20 U	0.20 U
Ametryn	ug/L	0 20 U	0 20 U	0 20 U	0.20 U
Atrazine	ug/L	0.20 U	0 20 U	0 20 U	0 20 U
Metolachlor	ug/L	0.20 U	0 20 U	0.20 U	0 20 U
Metribuzin	ug/L	0 20 U	0 20 U	0 20 U	0.20 U
Prometon	ug/L	0.20 U	0.20 U	0.20 U	0.20 U
Propazine	ug/L	0 20 U	0 20 U	0.20 U	0.20 U

ASR Number: 2178 **RLAB Approved Sample Analysis Results** **11/14/2003**

Project ID: VL0706 **Project Desc:** Aidex Site split sampling

Analysis/ Analyte	Units	5-__	6-__	7-__	8-__
1 Triazine Herbicides in Water by GC/NPD					
Alachlor	ug/L	0 20 U	0.20 U	0.20 U	0.20 U
Ametryn	ug/L	0 20 U	0.20 U	0.20 U	0 20 U
Atrazine	ug/L	0 20 U	0.20 U	0.20 U	0 20 U
Metolachlor	ug/L	0 20 U	0.20 U	0.20 U	0 20 U
Metribuzin	ug/L	0.20 U	0 20 U	0.20 U	0.20 U
Prometon	ug/L	0.20 U	0.20 U	0.20 U	0.20 U
Propazine	ug/L	0 20 U	0.20 U	0.20 U	0 20 U

ASR Number: 2178 **RLAB Approved Sample Analysis Results** **11/14/2003**

Project ID: VL0706 **Project Desc:** Aidex Site split sampling

Analysis/ Analyte	Units	9-__	10-__	11-__	12-__
1 Triazine Herbicides in Water by GC/NPD					
Alachlor	ug/L	0 20 U	0.20 U	0.20 U	0.20 U
Ametryn	ug/L	0 20 U	0.20 U	0.20 U	0 20 U
Atrazine	ug/L	0 20 U	0 20 U	0 20 U	0.20 U
Metolachlor	ug/L	0 20 U	0.20 U	0.20 U	0.20 U
Metribuzin	ug/L	0 20 U	0 20 U	0 20 U	0.20 U
Prometon	ug/L	0 20 U	0.20 U	0.20 U	0.20 U
Propazine	ug/L	0 20 U	0.20 U	0.20 U	0.20 U

ASR Number: 2178 **RLAB Approved Sample Analysis Results** **11/14/2003**

Project ID: VL0706 **Project Desc:** Aidex Site split sampling

Analysis/ Analyte	Units	13-__	14-__	15-__
1 Triazine Herbicides in Water by GC/NPD				
Alachlor	ug/L	0.20 U	0.20 U	0.20 U
Ametryn	ug/L	0.20 U	0.20 U	0.20 U
Atrazine	ug/L	0.20 U	0.91 J	0.20 U
Metolachlor	ug/L	0.20 U	0.20 U	0.20 U
Metribuzin	ug/L	0.20 U	0.20 U	0.20 U
Prometon	ug/L	0.20 U	0.25 J	0.20 U
Propazine	ug/L	0.20 U	0.32 J	0.20 U

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Victor Lyke	Aidex Corp. 5-Year Rvw	15-16 / 10 / 2003	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	4 Ltr BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt other sample numbers etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
2178-1		• 1				X					
2178-2		• 1				X					
2178-3		• 1				X					
2178-4		• 1				X					
2178-5		• 1				X					
2178-6		• 1				X					
2178-7		• 1				X					
2178-8		• 1				X					
2178-9		• 1				X					
2178-10		• 1				X					
2178-11		• 1				X					
2178-12		• 1				X					
2178-13		• 1				X					
2178-14		•• 2				X					MS/MSD
2178-15		• 1				X					

Thank You Complete

DESCRIPTION OF SHIPMENT Environmental Samples

MODE OF SHIPMENT Hand delivered

____ PIECE(S) CONSISTING OF ____ BOX(ES)

5 ICE CHEST(S) OTHER ____

____ COMMERCIAL CARRIER ____

____ COURIER

____ SAMPLER CONVEYED

(SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Jennie M Lueke ☐ SEALED ☒ UNSEALED	10/17/03	7:50	Barb Jones ☐ SEALED ☒ UNSEALED	analysis
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

STATE OF IOWA

DEPARTMENT OF NATURAL RESOURCES

THOMAS J VILSACK, GOVERNOR
SALLY J PEDERSON, LT GOVERNOR

~~CLEO A SELF, INTERIM~~ DIRECTOR
Jeffrey R Vonk,

Revised BVSPC
11/19/03

TRANSMITTAL FORM

TO: Genise Lueke
Black + Veatch Special Projects Corp
6601 College Blvd
Overland Park, KS 66211

FROM: Bob Drustrup
Contaminated Sites Section
PHONE: 515/ 281-8900
DATE: 11-17-03

Enclosed or attached is the following:

No.	Description
1	Results from 10-16-03 Aidex Samples

- [x] For your information and use
- [x] As requested
- [ ] Review and comment
- [ ] Necessary action
- [ ] Please return
- [ ] As noted below

REMARKS: I sent Vicki Lyke a copy of the results.
Bob D.

DNR Form (Rev 07/19/00) 542-0926

Hygienic Laboratory

The University of Iowa

2003 NOV 13 P 1:44

Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	200311029
Date Received	10-16-2003
Project	WMSF
Date Collected	10-16-2003 09:40
Collection Site	adx-14
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments: *Aidex Site, Act Code #1324*
Upon receipt at the UHL sample meets standard acceptance criteria

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
Atrazine	<0 1	0 1
Cyanazine	<0 1	0 1
Metolachlor	<0 1	0 1
Alachlor	<0 1	0.1
Metribuzin	<0 1	0.1
Butylate	<0 1	0.1
Trifluralin	<0 1	0 1
Acetochlor	<0 1	0 1
Desethyl Atrazine	<0 1	0 1
Desisopropyl Atrazine	<0 1	0.1

Date Analyzed. 10-31-2003
Method: EPA 507
Date Prepared· 10-24-2003
Preparation Method EPA 507/3510

Analyst: PB
Verified VR
Analyst· RAD
Verified: EE

Description of units used within this report

ug/L - Micrograms per Liter

Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No 027. AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request

If you have any questions please call Sherri Marine at 800/421-IOWA (4692) or 319/335-4500. Thank you.

End of Repor

Mary J R Gilchrist, Ph D
Director

102 Oakdale Campus, #101 OH
Iowa City Iowa 52242-5002
319/335-4500 Fax 319/335-4555

http //www uhl uiowa edu

H A Wallace Building
East Grand, Des Moines, Iowa 50319-0034
515/281-5371 Fax 515/243-1349

Hygienic Laboratory

The University of Iowa

Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	200311030
Date Received	10-16-2003
Project	WMSF
Date Collected	10-16-2003 08.15
Collection Site	adx-15
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments: *Aidex Site, Act Code #1324*
Upon receipt at the UHL sample meets standard acceptance criteria

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
Atrazine	0 20	0 1
Cyanazine	<0 1	0 1
Metolachlor	<0 1	0 1
Alachlor	<0 1	0 1
Metribuzin	<0 1	0 1
Butylate	<0 1	0 1
Trifluralin	<0 1	0 1
Acetochlor	<0.1	0 1
Desethyl Atrazine	<0 1	0.1
Desisopropyl Atrazine	<0 1	0 1
Prometon	0 10	0 1

Date Analyzed 10-31-2003
Method EPA 507
Date Prepared 10-24-2003
Preparation Method EPA 507/3510

Analyst. PB
Verified VR
Analyst: RAD
Verified EE

Description of units used within this report

ug/L - Micrograms per Liter

Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No 027. AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request

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End of Report

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Hygienic Laboratory

The University of Iowa

Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	200311031
Date Received	10-16-2003
Project	WMSF
Date Collected	10-15-2003 11:30
Collection Site	adx-17
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments: *Aidex Site, Aci Code #1324*
Upon receipt at the UHL sample meets standard acceptance criteria

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
Atrazine	<0.1	0.1
Cyanazine	<0.1	0.1
Metolachlor	<0.1	0.1
Alachlor	<0.1	0.1
Metribuzin	<0.1	0.1
Butylate	<0.1	0.1
Trifluralin	<0.1	0.1
Acetochlor	<0.1	0.1
Desethyl Atrazine	<0.1	0.1
Desisopropyl Atrazine	<0.1	0.1

Date Analyzed: 10-31-2003
Method: EPA 507
Date Prepared: 10-24-2003
Preparation Method: EPA 507/3510

Analyst: PB
Verified: VR
Analyst: RAD
Verified: EE

Description of units used within this report

ug/L - Micrograms per Liter

Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No. 027 AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request.

If you have any questions please call Sherri Marine at 800/421-IOWA (4692) or 319/335-4500. Thank you

End of Report

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Hygienic Laboratory

The University of Iowa

Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	200311032
Date Received	10-16-2003
Project	WMSF
Date Collected	10-15-2003 10:00
Collection Site	adx-19
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments: *Aidex Site, Act Code #1324*
Upon receipt at the UHL sample meets standard acceptance criteria

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
Atrazine	<0.1	0.1
Cyanazine	<0.1	0.1
Metolachlor	<0.1	0.1
Alachlor	<0.1	0.1
Metribuzin	<0.1	0.1
Butylate	<0.1	0.1
Trifluralin	<0.1	0.1
Acetochlor	<0.1	0.1
Desethyl Atrazine	<0.1	0.1
Desisopropyl Atrazine	<0.1	0.1

Date Analyzed: 10-31-2003 — Analyst: PB
Method: EPA 507 — Verified. VR
Date Prepared. 10-24-2003 — Analyst RAD
Preparation Method. EPA 507/3510 — Verified. EE

Description of units used within this report

ug/L - Micrograms per Liter

Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No 027 AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request

If you have any questions please call Sherri Marine at 800/421-IOWA (4692) or 319/335-4500 Thank you

End of Report

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Hygienic Laboratory

The University of Iowa

Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	200311033
Date Received	10-16-2003
Project	WMSF
Date Collected	10-15-2003 13:25
Collection Site	adx-20
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments	*Aidex Site, Act Code #1324* *Upon receipt at the UHL sample meets standard acceptance criteria*

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
Atrazine	<0 1	0.1
Cyanazine	<0 1	0.1
Metolachlor	<0 1	0 1
Alachlor	<0 1	0.1
Metribuzin	<0 1	0.1
Butylate	<0 1	0.1
Trifluralin	<0 1	0.1
Acetochlor	<0 1	0.1
Desethyl Atrazine	<0 1	0 1
Desisopropyl Atrazine	<0 1	0.1

Date Analyzed 10-31-2003
Method EPA 507
Date Prepared. 10-24-2003
Preparation Method EPA 507/3510

Analyst: PB
Verified: VR
Analyst: RAD
Verified· EE

Description of units used within this report

ug/L - Micrograms per Liter

Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No 027 AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request

If you have any questions please call Sherri Marine at 800/421-IOWA (4692) or 319/335-4500 Thank you.

End of Repor

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Hygienic Laboratory

The University of Iowa

Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	**200311034**
Date Received	10-16-2003
Project	WMSF
Date Collected	10-15-2003 13:35
Collection Site	adx-21
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments: *Aidex Site, Act Code #1324*
Upon receipt at the UHL sample meets standard acceptance criteria

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
Atrazine	<0 1	0.1
Cyanazine	<0 1	0.1
Metolachlor	<0 1	0.1
Alachlor	<0 1	0.1
Metribuzin	<0 1	0.1
Butylate	<0 1	0.1
Trifluralin	<0 1	0.1
Acetochlor	<0 1	0 1
Desethyl Atrazine	<0 1	0 1
Desisopropyl Atrazine	<0 1	0 1

Date Analyzed. 10-31-2003 — Analyst: PB
Method EPA 507 — Verified: VR
Date Prepared 10-24-2003 — Analyst RAD
Preparation Method EPA 507/3510 — Verified: EE

GC/MS Volatiles

Analyte	Concentration ug/L	Quantitation Limit
Tetrachloroethene	<5	5

Date Analyzed: 10-20-2003 — Analyst LL
Method UHL 8260 — Verified TC

Description of units used within this report

ug/L - Micrograms per Liter
Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No 027 AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request

Continued on next page

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If you have any questions please call Sherri Marine at 800/421-IOWA (4692) or 319/335-4500 Thank you

End of Repo

Mary J R Gilchrist, Ph D
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Hygienic Laboratory

The University of Iowa

Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	**200311035**
Date Received	10-16-2003
Project	WMSF
Date Collected	10-15-2003 15 40
Collection Site	adx-22
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments: *Aidex Site, Act Code #1324*
Upon receipt at the UHL sample meets standard acceptance criteria

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
Atrazine	<0 1	0.1
Cyanazine	<0 1	0.1
Metolachlor	<0.1	0.1
Alachlor	<0.1	0 1
Metribuzin	<0 1	0 1
Butylate	<0.1	0.1
Trifluralin	<2	2
Acetochlor	<0 1	0.1
Desethyl Atrazine	<1	1
Desisopropyl Atrazine	<1	1

Comments: *Additional unidentified peaks were observed in the analysis of this sample.*

Date Analyzed 10-31-2003
Method EPA 507
Date Prepared· 10-24-2003
Preparation Method· EPA 507/3510

Analyst. PB
Verified· VR
Analyst RAD
Verified EE

Description of units used within this report

ug/L - Micrograms per Liter

Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No 027 AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request

you have any questions please call Sherri Marine at 800/421-IOWA (4692) or 319/335-4500 Thank you

End of Report

Gary J R Gilchrist, Ph D
Director

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http //www uhl uiowa edu

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East Grand, Des Moines, Iowa 50319-0034
515/281-5371 Fax 515/243-1349

Hygienic Laboratory

The University of Iowa

Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	200311036
Date Received	10-16-2003
Project	WMSF
Date Collected	10-15-2003 15:25
Collection Site	adx-23
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments: *Aidex Site, Act Code #1324*
Upon receipt at the UHL sample meets standard acceptance criteria

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
Atrazine	<0.1	0.1
Cyanazine	<0.1	0.1
Metolachlor	<0.1	0.1
Alachlor	<0.1	0.1
Metribuzin	<0.1	0.1
Butylate	<0.1	0.1
Trifluralin	<0.1	0.1
Acetochlor	<0.1	0.1
Desethyl Atrazine	<0.1	0.1
Desisopropyl Atrazine	<0.1	0.1

Date Analyzed 10-31-2003
Method EPA 507
Date Prepared 10-24-2003
Preparation Method EPA 507/3510

Analyst: PB
Verified. VR
Analyst: RAD
Verified: EE

Description of units used within this report

ug/L - Micrograms per Liter

Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No 027 AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request.

If you have any questions please call Sherri Marine at 800/421-IOWA (4692) or 319/335-4500 Thank you

End of Repor

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Hygienic Laboratory

The University of Iowa

Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	**200311037**
Date Received	10-16-2003
Project	WMSF
Date Collected	10-15-2003 14.30
Collection Site	adx-26
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments: *Aidex Site, Act Code #1324*
Upon receipt at the UHL sample meets standard acceptance criteria

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
Atrazine	<0.1	0.1
Cyanazine	<0.1	0.1
Metolachlor	<0.1	0.1
Alachlor	<0.1	0.1
Metribuzin	<0.1	0.1
Butylate	<0.1	0.1
Trifluralin	<0.1	0.1
Acetochlor	<0.1	0.1
Deisethyl Atrazine	<0.1	0.1
Deisisopropyl Atrazine	<0.1	0.1

Date Analyzed 10-31-2003 — Analyst: PB
Method: EPA 507 — Verified. VR
Date Prepared 10-24-2003 — Analyst. RAD
Preparation Method: EPA 507/3510 — Verified: EE

Description of units used within this report

ug/L - Micrograms per Liter

Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No 027 AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request

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Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	200311038
Date Received	10-16-2003
Project	WMSF
Date Collected	10-15-2003 14:45
Collection Site	adx-27
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments: *Aidex Site, Act Code #1324*
Upon receipt at the UHL sample meets standard acceptance criteria

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
Atrazine	<0.1	0.1
Cyanazine	<0.1	0.1
Metolachlor	<0.1	0.1
Alachlor	<0.1	0.1
Metribuzin	<0.1	0.1
Butylate	<0.1	0.1
Trifluralin	<0.1	0.1
Acetochlor	<0.1	0.1
Desethyl Atrazine	<0.1	0.1
Desisopropyl Atrazine	<0.1	0.1

Date Analyzed: 10-31-2003
Method: EPA 507
Date Prepared: 10-24-2003
Preparation Method: EPA 507/3510

Analyst: PB
Verified: VR
Analyst: RAD
Verified: EE

Description of units used within this report

ug/L - Micrograms per Liter

Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No. 027. AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request

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Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	**200311039**
Date Received	10-16-2003
Project	WMSF
Date Collected	10-15-2003 16:00
Collection Site	mw-1
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments: *Aidex Site, Act Code #1324*
Upon receipt at the UHL sample meets standard acceptance criteria

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
Atrazine	<0.1	0.1
Cyanazine	<0.1	0.1
Metolachlor	<0.1	0.1
Alachlor	<0.1	0.1
Metribuzin	<0.1	0.1
Butylate	<0.1	0.1
Trifluralin	<0.1	0.1
Acetochlor	<0.1	0.1
Desethyl Atrazine	<0.1	0.1
Desisopropyl Atrazine	<0.1	0.1

Date Analyzed: 11-01-2003 — Analyst PB
Method: EPA 507 — Verified VR
Date Prepared 10-24-2003 — Analyst RAD
Preparation Method EPA 507/3510 — Verified EE

Description of units used within this report

ug/L - Micrograms per Liter

Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No 027 AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request

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End of Report

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Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	200311040
Date Received	10-16-2003
Project	WMSF
Date Collected	10-16-2003 09 30
Collection Site	mw-2
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments: *Aidex Site, Act Code #1324*
Upon receipt at the UHL sample meets standard acceptance criteria

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
Atrazine	1.7	0.1
Cyanazine	<0.1	0 1
Metolachlor	<0.1	0 1
Alachlor	<0 1	0 1
Metribuzin	<0 1	0 1
Butylate	<0 1	0.1
Trifluralin	<0 1	0 1
Acetochlor	<0 1	0.1
Desethyl Atrazine	<0 1	0 1
Desisopropyl Atrazine	<0.1	0.1
Prometon	0 47	0.1
Propazine	0 54	0 1
Ametryn	0 20	0 1

Date Analyzed. 11-01-2003
Method· EPA 507
Date Prepared: 10-24-2003
Preparation Method· EPA 507/3510

Analyst. PB
Verified· VR
Analyst. RAD
Verified: EE

Description of units used within this report

ug/L - Micrograms per Liter

Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No 027 AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request

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Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	**200311041**
Date Received	10-16-2003
Project	WMSF
Date Collected	10-16-2003 09:00
Collection Site	mw-3
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments	*Aidex Site, Act Code #1324*
	Upon receipt at the UHL sample meets standard acceptance criteria.

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
Atrazine	0.19	0 1
Cyanazine	<0 1	0.1
Metolachlor	<0 1	0.1
Alachlor	<0 1	0.1
Metribuzin	<0.1	0.1
Butylate	<0.1	0 1
Trifluralin	<0.1	0 1
Acetochlor	<0 1	0 1
Desethyl Atrazine	<0 1	0 1
Desisopropyl Atrazine	<0 2	0.2
Prometon	0 12	0.1

Date Analyzed 11-01-2003 — Analyst. PB
Method: EPA 507 — Verified: VR
Date Prepared· 10-24-2003 — Analyst. RAD
Preparation Method EPA 507/3510 — Verified· EE

Description of units used within this report

ug/L - Micrograms per Liter

Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No 027 AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request

If you have any questions please call Sherri Marine at 800/421-IOWA (4692) or 319/335-4500 Thank you

End of Report

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Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	200311042
Date Received	10-16-2003
Project	WMSF
Date Collected	10-15-2003 15.35
Collection Site	mw-4
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments: *Aidex Site, Act Code #1324*
Upon receipt at the UHL sample meets standard acceptance criteria

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
Atrazine	0 1	0.1
Cyanazine	<0 1	0.1
Metolachlor	<0 1	0 1
Alachlor	<0 1	0.1
Metribuzin	<0.1	0.1
Butylate	<0 1	0 1
Trifluralin	<0.1	0.1
Acetochlor	<0 1	0.1
Desethyl Atrazine	<0.1	0 1
Desisopropyl Atrazine	<0 1	0.1
Prometon	0.13	0 1

Comments: *Additional unidentified peaks were observed in the analysis of this sample*

Date Analyzed. 11-01-2003
Method: EPA 507
Date Prepared: 10-24-2003
Preparation Method. EPA 507/3510

Analyst: PB
Verified: VR
Analyst· RAD
Verified. EE

Description of units used within this report

ug/L - Micrograms per Liter

Quant Limit - Lowest concentration reliably measured

Iowa Laboratory Certification No. 027 AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request

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Date of report: 11-10-2003

ROBERT DRUSTRUP
IDNR CONTAMINATED SITES
WALLACE STATE OFFICE BLDG
900 EAST GRAND AVENUE
DES MOINES IA 50319-0034

Sample Number	200311043
Date Received	10-16-2003
Project	WMSF
Date Collected	10-15-2003 13.40
Collection Site	igs-1a
Collection Town	Council Bluffs
Description	water
Reference	AIDEX SITE
Collector	DRUSTRUP ROBERT
Phone	(515) 281-8900
Purchase Order	

Comments: *Aidex Site, Act. Code #1324*
Upon receipt at the UHL sample meets standard acceptance criteria

Results of Analyses

Nitrogen Containing Herbicides in Water

Analyte	Concentration ug/L	Quantitation Limit
trazine	<0.1	0 1
yanazine	<0 1	0 1
Metolachlor	<0 1	0 1
lachlor	<0 1	0.1
fetribuzin	<0.1	0 1
Butylate	<0 1	0 1
rifluralin	<0.1	0 1
cetochlor	<0.1	0.1
Desethyl Atrazine	<0 1	0.1
Desisopropyl Atrazine	<0 1	0.1

ate Analyzed: 11-01-2003 — Analyst. PB
ethod: EPA 507 — Verified VR
)ate Prepared. 10-24-2003 — Analyst· RAD
reparation Method EPA 507/3510 — Verified EE

Description of units used within this report

ug/L - Micrograms per Liter

Quant Limit - Lowest concentration reliably measured

wa Laboratory Certification No ·027 AIHA, NELAP, NVLAP, USEPA, and other credentials available upon request

f you have any questions please call Sherri Marine at 800/421-IOWA (4692) or 319/335-4500 Thank you

End of Report

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CHAIN-OF-CUSTODY

Purchase Order #:

Contact Name	Phone	Analysis Requested	Project Name and/or Number
Robert D Drustrup	(515) 281-8900	Common Herbicides, PCE	Aidex, Act. Code # 1324
Company	**Fax**		**Collector's Phone #**
Iowa DNR	(515) 281-8895		(515) 281-8900
Address			**Print Collector's Name**
Wallace Bldg.			Robert D. Drustrup
City	**State** / **Zip**		**Collector's Signature**
Des Moines	IA 50319		Robert D. Drustrup

	Sample ID/Description	Date	Time	Sample Matrix: W	S	Other	Comments/UHL Sample Number
1.	ADX-14	10/16/03	9:40a	✓			200311029
2.	ADX-15	10/16/03	8:15a	✓			200311030
3.	ADX-17	10/15/03	11:30a	✓			200311031
4.	ADX-19	10/15/03	10:00a	✓			200311032
5.	ADX-20	10/15/03	1:25p	✓			200311033
6.	ADX-21	10/15/03	1:35p	✓			200311034
7.	ADX-22	10/15/03	3:40p	✓			200311035
8.	ADX-23	10/15/03	3:25p	✓			200311036
9.	ADX-26	10/15/03	2:30p	✓			200311037
10.	ADX-27	10/15/03	2:45p	✓			200311038

Relinquished by	Date	Time	Comments
Robert D. Drustrup	10-16-03		
Received at Laboratory by	**Date**	**Time**	**Sample Receipt Comments**
Mgt. Staude	10-16-03	14:20	1-18 each IC & 3-13 for ADX-21 <6°C
Marcia Davis	10-17-03	10:15	

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Blue - Client copy

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CHAIN-OF-CUSTODY

Purchase Order #:

Contact Name	Phone
Robert D Drustrup	(515) 281-8900

Company	Fax
Iowa DNR	(515) 281-8895

Address: Wallace Bldg.

City	State	Zip
Des Moines	IA	50319

Project Name and/or Number: Aidex, Act. Code #1324

Collector's Phone #: (515) 281-8900

Print Collector's Name: Robert D. Drustrup

Collector's Signature: Robert D Drustrup

	Sample ID/Description	Date	Time	W	S	Other	Analysis Requested: Common Herbicides	Comments/UHL Sample Number
1.	MW-1	10/15/03	4:00p	✓			✓	200311039
2.	MW-2	10/16/03	9:30a	✓			✓	200311040
3.	MW-3	10/16/03	9:00a	✓			✓	200311041
4.	MW-4	10/15/03	3:35p	✓			✓	200311042
5.	IGS-1A	10/15/03	1:40p	✓			✓	200311043
6.								
7.								
8.								
9.								
10.								

Relinquished by	Date	Time	Comments
Robert D. Drustrup	10-16-03		

Received at Laboratory by	Date	Time	Sample Receipt Comments
M. Staude	10-16-03	1420	1-1L each IC <6°C
Marcia Dan...	10-17-03	10:15	

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Attachment 5
Site Inspection Trip Memorandum with
Checklist and Interview Forms

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BLACK & VEATCH SPECIAL PROJECTS CORP.

TRIP MEMORANDUM

USEPA
Aidex Corporation Site
Third Five-Year Review Report
Site Inspection

BVSPC Project 46915 841
BVSPC File E.1
October 20, 2003

To: File

From: G M Luecke

Dates onsite: October 15 and 16, 2003
Personnel onsite Genise Luecke, BVSPC

Trip Purpose. Conduct the site inspection and collect split groundwater samples during the Iowa Department of Natural Resources' (IDNR's) annual groundwater monitoring event.

The following is a brief summary of the activities completed during the site inspection. The site inspection activities were recorded on pages 1 through 7 of the Field Logbook. No pictures were taken during the site inspection. All split groundwater samples were collected for analysis of herbicides Split groundwater samples were collected in accordance with the approved Quality Assurance Project Plan (QAPP) and Field Sampling Plan (FSP), both dated September 23, 2003, prepared by BVSPC.

Wednesday, October 15, 2003
Met with IDNR personnel Bob Drustrup and Matt Culp at 9:15 a.m Bob Drustrup announced our arrival to the business-owner Groundwater samples were collected from 11 monitoring wells. Table 1 lists the monitoring wells sampled and comments.

Thursday, October 16, 2003
Met IDNR at the site at 8:00 a m. Collected groundwater samples from the remaining 4 monitoring wells (see Table 1).

Bob Drustrup provided copies of annual monitoring data for the site from 1998, 1999, 2000, and 2001.

Went to the Mills County offices in Glenwood, Iowa, to check on property ownership. The land and buildings are owned by R.T.D. L&C, an Iowa Limited liability Company. Address P.O Box 1094, Council Bluffs, Iowa.

Tried to contact the Mayor of Glenwood, but mayor was out of town.

Copies of the Field Logbook pages, field sheets, and chain of custody are attached.

Table 1
Split Groundwater Sampling Effort Summary
2003 Annual Groundwater Monitoring Effort

Well	BVSPC Sample Number	Date Sampled	Comments
ADX-19	2178-01	10/15/03	IDNR used a B-K pump to purge well and collect sample.
ADX-17	2178-02	10/15/03	IDNR used a B-K pump to purge well and collect sample
ADX-20	2178-03	10/15/03	IDNR used a B-K pump to purge well and collect sample.
ADX-21	2178-04	10/15/03	IDNR used a B-K pump to purge well and collect sample IDNR also collected a portion for VOC analysis.
IGS-1A	2178-05	10/15/03	IDNR used a dedicated Wattera pump to purge well and collect sample.
ADX-26	2178-06	10/15/03	IDNR used a dedicated Wattera pump to purge well and collect sample
ADX-27	2178-07	10/15/03	IDNR used a B-K pump to purge well and collect sample. There was a n obstruction in the well at about 25 feet bgs. IDNR indicated that it was most likely a Wattera pump that had broken off and been lost in the well The well is 51 feet deep. No more water could be pumped after about one well volume After letting the well recharge for a while the samples were collected.
MW-4	2178-08	10/15/03	IDNR used a dedicated Wattera pump to purge well and collect sample.
ADX-22	2178-09	10/15/03	IDNR used a dedicated Wattera pump to purge well and collect sample.
ADX-23	2178-10	10/15/03	IDNR used a B-K pump to purge well and collect sample.
MW-1	2178-11	10/15/03	IDNR used a dedicated Wattera pump to purge well and collect sample
ADX-15	2178-12	10/16/03	IDNR used a dedicated Wattera pump to purge well and collect sample Because of the large diameter of this well and large volume of water in the well, IDNR purged it for only 15 gallons by low flow before collecting the sample
MW-3	2178-13	10/16/03	IDNR used a dedicated Wattera pump to purge well and collect sample
MW-2	2178-14	10/16/03	IDNR used a dedicated Wattera pump to purge well and collect sample BVSPC collected an MS/MD at this location.
ADX-14	2178-15	10/16/03	Active facility production well. Outside tap used to purge well and collect sample.

Notes:
B-K - Brainard Kilman pump
Water levels were measured and recorded by IDNR.

1

Dan Luecke October 15, 2003

0830 Arrived at Alden site. Drove around and scanned area and wells. Awaited IDNR representatives. Five Year Review
Clear ~55° F
Address on mailbox is 51213 185th Street

0915 IDNR - Bob Brustrup, Matt Culp arrived. ADX 6M-2

0945 Began at ~~ADX~~-19 sampling
water level 15.63'
IDNR collects a 16 oz amber for their sample volume.
Pump installed at about 65' bgs
Readings taken @ 26 gallons
T = 50° F
SMV is name of one company

1030 finished at ADX-19 took split from IDNR. 1/2 filled their bottle then 1/2 filled ours then finished theirs then finished ours

1039 Began at ADX-17
Water level 14.14'

1130 Collected split sample ADX-17

Dan Luecke

2

Dan Luecke 10/15/03

40 Finished at ADX-17
Left for lunch

1240 Returned to site after lunch.
Began sampling ADX-21
Water Level @ 10.90'
Also sampling / purging at ADX-20 at same time

325 Collected split from ADX-20

335 Collected split from ADX-21
IDNR also collected VOAs

340 Collected split from IGS-1A

350 Went to ADX-26 and ADX-27
had to walk RR tracks from near ADX-20 to access.

430 Collected split from ADX-26

1445 There's an obstruction in ADX-27 at about 25' may be an old Waterra pump that broke off. IDNR purged one well volume then collected sample from ADX-27

3 10/15/03 GM Luecke

1450 Moved to MW-4, ADX-22, and ADX-23
1525 Collected split from ADX-23
1535 Collected split sample from MW-4
1540 Collected split sample from ~~DW~~ GAC ADX-22
1545 Moved to MW-1
1600 Collected split from MW-1
1615 Left site as company closed and locks up at 1630.
Agreed to meet IDNR at 0800 on 10/16/03 to finish up sampling
Discussed possible location for MS/MSD
IDNR suggested.
Left site to get ice and sample management.

GM Luecke

GM Luecke

14

10/16/03

0740 Arrived at Aides site to complete the 5-year review sampling.
0750 IDNR arrived moved to ADX-15 which is a deep, large diameter former production well. IDNR purges with a low flow technique
0815 Collected split sample from ADX-15 after purging 15 gallons low flow.
0830 Moved to MW-3
0900 Collected split sample after purging dry
0904 Moved to MW-2
0930 collected split and MS/MSD
0935 Moved to ADX-14
This is a facility production well. According to Bob Duestrup they don't use it for drinking because of the bad taste.

GM Luecke

10/16/03 — DM Luecke

0940 Collected split from ADX-14.

0955 Bob Druetzer provided copies of their 1998, 1999, 2000, and 2001 sampling data.

1000 Left site for City of Glenwood.

1040 Arrived at County office in Glenwood to check current ownership of property. The land and buildings are currently owned by R.T.D. L. & C and Dowa Limited Liability ~~Corp~~ Co. Address for mailing is PO Box 1094 Council Bluffs, Iowa.

1130 Checked in with city. Mayor is unavailable this week.

1200 Done with information gathering. Packed samples for transport

DM Luecke 10/16/03

200 cont. - Got ice and packed coolers

220 Stopped for lunch then will head back to KC.

DM Luecke

7

Dan Luecke 10/17/03

7:30 Dropped off coolers with EPA lab. 6 coolers 15 samples, 1 MS/MSD

800 Headed to office ..

DJM Luecke

8

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 1 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-1-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: Well ~~IDX~~ ADX GML -19

External Sample Number: 101503 - ~~IDX~~ ADX GML -19

Expected Conc: (or Circle One: (Low) Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	10/15/03	09:47
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A) Split sample from IDNR
13.3 gallons = 1 well volume
water level 15.63'
B-K pump used

YKH 1/8

Sample Collected By: G. Luecke

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 2 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-2-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: ADX-17

External Sample Number: 101503-ADX-17

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 10/15/03 11:30
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A) Split sample from IDNR

WL - 14.14'

B-K pump used

~~HH~~

Sample Collected By: G. Luecke

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 3 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-3-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: ADX-20

External Sample Number: 101503-ADX-20

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 10/15/03 13:25
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A) Split sample from IDNR

WL - 12.52'

B-K pump used

Sample Collected By: G. Luecke

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 4 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-4-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: ADX-21

External Sample Number: 101503 - ADX-21

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 10/15/03 13:35
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A)

Split sample from IDNR

WL - 16.74'

B-K pump used

Sample Collected By: G. Luecke

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 5 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-5-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: ~~IG~~ IGS-1A
6ML

External Sample Number: 101503 - IGS-1A

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 10/15/03 13:40
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A)

Split sample from IDNR

WL - 10.90'

Waterra (dedicated) pump used

Sample Collected By: G. Luecke

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 6 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-6-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: ADX-26

External Sample Number: 101503-ADX-26

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 10/15/03 14:30

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A)

Split sample from IDNR

WL - 13.97'

Waterra (dedicated) pump used

Sample Collected By: G. Luecke

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 7 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-7-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: ADX-27

External Sample Number: 101503-ADX-27

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 10/15/03 14:45
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A)

Split sample from IDNR

WL - 11.60'

Obstruction in well at about 25'.
Purged 1 well volume before well went dry at 25'. Collected sample after one well volume was purged.

Unable to collect full sample volume.
Bottle 3/4 full

B-K pump used

Sample Collected By: G. Luecke

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 8 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-8-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: MW-4

External Sample Number: 101503 - MW-4

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 10/15/03 15:35

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A) Split sample from IDNR

Waterra (dedicated) pump used

Sample Collected By: G. Luecke

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 9 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-9-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: ADX-22

External Sample Number: 101503 - ADX - 22

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 10/15/03 15:40

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A) Split Sample from IDNR

Watera (dedicated) pump used

Sample Collected By: G. Luecke

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 10 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-10-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: ADX-23

External Sample Number: 101503-ADX-23

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 10/15/03 15:25

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A) Split sample from IDNR

B-K pump used

Sample Collected By: G. Luecke

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 11 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-11-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: MW-1

External Sample Number: 101503-MW-1

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 10/15/03 16:00

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A) Split sample from IDNR
MW-1 pumped dry after 14 gallons
Dedicated Waterra pump used.

Sample Collected By: G. Luecke

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 12 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-12-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: ADX-15

External Sample Number: 101603 - ADX-15

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 10/16/03 08:15
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A) Split sample from IDNR
dedicated waterra pump
purged 15 gallons low flow

Sample Collected By: G. Luecke

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 13 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-13-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: MW-3

External Sample Number: 101603 - MW - 3

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 10/16/03 09:00
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A) Split sample from IDNR
dedicated watera pump
WL - 13.64'

Sample Collected By: G. Luecke

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 14 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-14-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: MW-2

External Sample Number: 101603-MW-2

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 10/16/03 09:30
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A) Split sample from IDNR
MS/MSD Extra volume collected
watera pump used (dedicated)

Sample Collected By: G. Luecke

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 2178 **Sample Number:** 15 **QC Code:** __ **Matrix:** Water **Tag ID:** 2178-15-__

Project ID: VL0706 **Project Manager:** Victor Lyke
Project Desc: Aidex Site split sampling
City: **State:** Iowa
Program: Superfund
Site Name: AIDEX CORP. - SITE EVALUATION/DISPOSITION **Site ID:** 0706 **Site OU:** 00

Location Desc: ADX-14

External Sample Number: 101603-ADX-14

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 10/16/03 09:40

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	14 Days	1 Triazine Herbicides in Water by GC/NPD

Sample Comments:

(N/A) Split from IDNR
Active production well.
IDNR let run about 5 to 10 minutes
before sampling

Sample Collected By: G. Luecke

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Victor Lyke	Aidex Corp 5-Year Rvw	15-16 / 10 / 2003	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	4 Ltr BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt other sample numbers etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
2178-1		1				X					
2178-2		1				X					
2178-3		1				X					
2178-4		1				X					
2178-5		1				X					
2178-6		1				X					
2178-7		1				X					
2178-8		1				X					
2178-9		1				X					
2178-10		1				X					
2178-11		1				X					
2178-12		1				X					
2178-13		1				X					
2178-14		2				X					MS/MSD
2178-15		1				X					

DESCRIPTION OF SHIPMENT Analytical Samples

MODE OF SHIPMENT Hand delivered

___ PIECE(S) CONSISTING OF ___ BOX(ES)

3 ICE CHEST(S) OTHER ___

___ COMMERCIAL CARRIER ___

___ COURIER

___ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Victor A Lyke ☐ SEALED ☒ UNSEALED	10/17/03	7:30	Linda Conrad ☐ SEALED ☒ UNSEALED	analysis
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

7-EPA-9262(Revised 5/85)

Site Inspection Checklist

I. SITE INFORMATION	
Site name: Aidex Corp Site	**Date of inspection:** October 15-16, 2003
Location and Region: Mills County, IA/ Region 7	**EPA ID:** IAD042581256
Agency, office, or company leading the five-year review: USEPA Region VII	**Weather/temperature:** Partly Cloudy, 50°F

Remedy Includes: (Check all that apply)

- ☐ Landfill cover/containment
- ☐ Access controls
- ☐ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls
- ☒ Other groundwater monitoring

Attachments: ☐ Inspection team roster below ☒ Site map attached

Site Inspection performed by
Genise M Luecke with Black & Veatch Special Projects Corp.

II. INTERVIEWS (Check all that apply)

Bob Drustrup, Iowa Department of Natural Resources Interview form attached

1 **O&M site manager** _____ _____ _____
Name Title Date

Interviewed ☐ at site ☐ at office ☐ by phone Phone no _____

Problems, suggestions, ☐ Report attached _____

_____

2 **O&M staff** _____ _____ _____
Name Title Date
Interviewed ☐ at site ☐ at office ☐ by phone Phone no _____
Problems, suggestions, ☐ Report attached _____
_____

3. **Local regulatory authorities and response agencies** (i.e , State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency IDNR
Contact Bob Drustrup _____ Various 515/281-8900
Name Title Date Phone no
Problems; suggestions; ☒ Report attached No problems identified Suggests discontinuing the monitoring and 5-year reviews

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no
Problems; suggestions; ☐ Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems, suggestions; ☐ Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no
Problems; suggestions; ☐ Report attached _____

4 **Other interviews** (optional) ☐ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1	**O&M Documents** N/A			
	☐ O&M manual	☐ Readily available	☐ Up to date	☒ N/A
	☐ As-built drawings	☐ Readily available	☐ Up to date	☒ N/A
	☐ Maintenance logs	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
2	**Site-Specific Health and Safety Plan** N/A	☐ Readily available	☐ Up to date	☒ N/A
	☐ Contingency plan/emergency response plan	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
3	**O&M and OSHA Training Records** N/A	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
4.	**Permits and Service Agreements** N/A			
	☐ Air discharge permit	☐ Readily available	☐ Up to date	☒ N/A
	☐ Effluent discharge	☐ Readily available	☐ Up to date	☒ N/A
	☐ Waste disposal, POTW	☐ Readily available	☐ Up to date	☒ N/A
	☐ Other permits	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
5.	**Gas Generation Records** N/A	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
6	**Settlement Monument Records** N/A	☐ Readily available	☐ Up to date	☒N/A
	Remarks			
7	**Groundwater Monitoring Records**	☒Readily available	☒Up to date	☐ N/A
	Remarks_ IDNR provided copies of annual monitoring results			
8.	**Leachate Extraction Records**	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
9	**Discharge Compliance Records**			
	☐ Air	☐ Readily available	☐ Up to date	☒ N/A
	☐ Water (effluent)	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			
10	**Daily Access/Security Logs**	☐ Readily available	☐ Up to date	☒ N/A
	Remarks			

IV. O&M COSTS

1. **O&M Organization** - Groundwater monitoring only
   - ☒ State in-house
   - ☐ Contractor for State
   - ☐ PRP in-house
   - ☐ Contractor for PRP
   - ☐ Federal Facility in-house
   - ☐ Contractor for Federal Facility
   - ☐ Other _____

2. **O&M Cost Records** - N/A
   - ☐ Readily available ☐ Up to date
   - ☐ Funding mechanism/agreement in place
   - Original O&M cost estimate _____ ☐ Breakdown attached

   Total annual cost by year for review period if available

   From _____ (Date) To _____ (Date) _____ (Total cost) ☐ Breakdown attached
   From _____ (Date) To _____ (Date) _____ (Total cost) ☐ Breakdown attached
   From _____ (Date) To _____ (Date) _____ (Total cost) ☐ Breakdown attached
   From _____ (Date) To _____ (Date) _____ (Total cost) ☐ Breakdown attached
   From _____ (Date) To _____ (Date) _____ (Total cost) ☐ Breakdown attached

3. **Unanticipated or Unusually High O&M Costs During Review Period**
   Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS ☐ Applicable ☐ N/A

A. Fencing - Intact during site visit

1. **Fencing damaged** ☐ Location shown on site map ☐ Gates secured ☐ N/A
   Remarks _____

B. Other Access Restrictions

1 **Signs and other security measures** ☐ Location shown on site map ☒ N/A
   Remarks _____

C. Institutional Controls (ICs)

1 **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☒ No ☐ N/A

Site conditions imply ICs not being fully enforced ☐ Yes ☒ No ☐ N/A

Type of monitoring (*e g* , self-reporting, drive by) _____

Frequency _____

Responsible party/agency _____

Contact _____ _____ _____ _____

Name Title Date Phone no.

Reporting is up-to-date ☐ Yes ☐ No ☒ N/A

Reports are verified by the lead agency ☐ Yes ☐ No ☒ N/A

Specific requirements in deed or decision documents have been met ☐ Yes ☐ No ☒ N/A

Violations have been reported ☐ Yes ☐ No ☒ N/A

Other problems or suggestions: ☐ Report attached

_____

_____

_____

_____

2 **Adequacy** ☐ ICs are adequate ☐ ICs are inadequate ☒ N/A

Remarks _____

_____

_____

D. General

1 **Vandalism/trespassing** ☐ Location shown on site map No vandalism evident

Remarks _____

_____

2 **Land use changes on site** ☐ N/A

Remarks None noted _____

_____

3 **Land use changes off site** ☐ N/A

Remarks None noted _____

_____

VI. GENERAL SITE CONDITIONS

A. Roads ☐ Applicable ☒ N/A

1 **Roads damaged** ☐ Location shown on site map ☐ Roads adequate ☐ N/A

Remarks _____

_____

B. Other Site Conditions

Remarks Buildings looked to be in good shape No vandalism evident

VII. LANDFILL COVERS ☐ Applicable ☒ N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ☐ Settlement not evident
   Areal extent_____ Depth_____
   Remarks_____

2. **Cracks** ☐ Location shown on site map ☐ Cracking not evident
   Lengths_____ Widths_____ Depths_____
   Remarks_____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____

4. **Holes** ☐ Location shown on site map ☐ Holes not evident
   Areal extent_____ Depth_____
   Remarks_____

5. **Vegetative Cover** ☐ Grass ☐ Cover properly established ☐ No signs of stress
   ☐ Trees/Shrubs (indicate size and locations on a diagram)
   Remarks_____

6. **Alternative Cover (armored rock, concrete, etc.)** ☐ N/A
   Remarks_____

7. **Bulges** ☐ Location shown on site map ☐ Bulges not evident
   Areal extent_____ Height_____
   Remarks_____

8	**Wet Areas/Water Damage**	☐ Wet areas/water damage not evident	
	☐ Wet areas	☐ Location shown on site map	Areal extent_____
	☐ Ponding	☐ Location shown on site map	Areal extent_____
	☐ Seeps	☐ Location shown on site map	Areal extent_____
	☐ Soft subgrade	☐ Location shown on site map	Areal extent_____
	Remarks_____		
9	**Slope Instability** ☐ Slides	☐ Location shown on site map	☐ No evidence of slope instability
	Areal extent_____		
	Remarks_____		
B. Benches	☐ Applicable ☐ N/A		
	(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)		
1	**Flows Bypass Bench**	☐ Location shown on site map	☐ N/A or okay
	Remarks_____		
2	**Bench Breached**	☐ Location shown on site map	☐ N/A or okay
	Remarks_____		
3	**Bench Overtopped**	☐ Location shown on site map	☐ N/A or okay
	Remarks_____		
C. Letdown Channels	☐ Applicable ☐ N/A		
	(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)		
1	**Settlement**	☐ Location shown on site map	☐ No evidence of settlement
	Areal extent_____	Depth_____	
	Remarks_____		
2.	**Material Degradation**	☐ Location shown on site map	☐ No evidence of degradation
	Material type_____	Areal extent_____	
	Remarks_____		
3.	**Erosion**	☐ Location shown on site map	☐ No evidence of erosion
	Areal extent_____	Depth_____	
	Remarks_____		

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☐ Applicable ☐ N/A

1. **Gas Vents** ☐ Active ☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☐ N/A
Remarks_____

2 **Gas Monitoring Probes**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

5 **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks_____

E. Gas Collection and Treatment	☐ Applicable	☐ N/A
1	**Gas Treatment Facilities** ☐ Flaring ☐ Thermal destruction ☐ Collection for reuse ☐ Good condition ☐ Needs Maintenance Remarks_____	
2	**Gas Collection Wells, Manifolds and Piping** ☐ Good condition ☐ Needs Maintenance Remarks_____	
3	**Gas Monitoring Facilities** (*e g* , gas monitoring of adjacent homes or buildings) ☐ Good condition ☐ Needs Maintenance ☐ N/A Remarks_____	
F. Cover Drainage Layer	☐ Applicable	☐ N/A
1.	**Outlet Pipes Inspected** ☐ Functioning Remarks_____	☐ N/A
2	**Outlet Rock Inspected** ☐ Functioning Remarks_____	☐ N/A
G. Detention/Sedimentation Ponds	☐ Applicable	☐ N/A
1	**Siltation** Areal extent_____ Depth_____ ☐ Siltation not evident Remarks_____	☐ N/A
2	**Erosion** Areal extent_____ Depth_____ ☐ Erosion not evident Remarks_____	
3.	**Outlet Works** ☐ Functioning ☐ N/A Remarks_____	
4	**Dam** ☐ Functioning ☐ N/A Remarks_____	

H. Retaining Walls	☐ Applicable ☐ N/A	
1	**Deformations** ☐ Location shown on site map ☐ Deformation not evident Horizontal displacement_____ Vertical displacement_____ Rotational displacement_____ Remarks_____	
2.	**Degradation** ☐ Location shown on site map ☐ Degradation not evident Remarks_____	
I. Perimeter Ditches/Off-Site Discharge	☐ Applicable ☐ N/A	
1.	**Siltation** ☐ Location shown on site map ☐ Siltation not evident Areal extent_____ Depth_____ Remarks_____	
2.	**Vegetative Growth** ☐ Location shown on site map ☐ N/A ☐ Vegetation does not impede flow Areal extent_____ Type_____ Remarks_____	
3.	**Erosion** ☐ Location shown on site map ☐ Erosion not evident Areal extent_____ Depth_____ Remarks_____	
4.	**Discharge Structure** ☐ Functioning ☐ N/A Remarks_____	
VIII. VERTICAL BARRIER WALLS	☐ Applicable ☒ N/A	
1	**Settlement** ☐ Location shown on site map ☐ Settlement not evident Areal extent_____ Depth_____ Remarks_____	
2	**Performance Monitoring** Type of monitoring_____ ☐ Performance not monitored Frequency_____ ☐ Evidence of breaching Head differential_____ Remarks_____	

IX. GROUNDWATER/SURFACE WATER REMEDIES ☒ Applicable ☐ N/A	
A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☒ N/A	
1.	**Pumps, Wellhead Plumbing, and Electrical** ☐ Good condition ☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A Remarks_____
2	**Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances** ☐ Good condition ☐ Needs Maintenance Remarks_____
3	**Spare Parts and Equipment** ☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided Remarks_____
B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☒N/A	
1	**Collection Structures, Pumps, and Electrical** ☐ Good condition ☐ Needs Maintenance Remarks_____
2	**Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances** ☐ Good condition ☐ Needs Maintenance Remarks_____
3	**Spare Parts and Equipment** ☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided Remarks_____

C. Treatment System ☐ Applicable ☒ N/A

1 **Treatment Train** (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers
☐ Filters_____
☐ Additive (*e g* , chelation agent, flocculent)_____
☐ Others_____
☐ Good condition ☐ Needs Maintenance
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of groundwater treated annually_____
☐ Quantity of surface water treated annually_____
Remarks_____

2. **Electrical Enclosures and Panels** (properly rated and functional)
☐ N/A ☐ Good condition ☐ Needs Maintenance
Remarks_____

3 **Tanks, Vaults, Storage Vessels**
☐ N/A ☐ Good condition ☐ Proper secondary containment ☐ Needs Maintenance
Remarks_____

4 **Discharge Structure and Appurtenances**
☐ N/A ☐ Good condition ☐ Needs Maintenance
Remarks_____

5 **Treatment Building(s)**
☐ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair
☐ Chemicals and equipment properly stored
Remarks_____

6 **Monitoring Wells** (pump and treatment remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks_____

D. Monitoring Data

1 Monitoring Data
☒ Is routinely submitted on time ☒ Is of acceptable quality

2 Monitoring data suggests:
☐ Groundwater plume is effectively contained ☒ Contaminant concentrations are declining

D. Monitored Natural Attenuation

1 **Monitoring Wells** (natural attenuation remedy)

☒ Properly secured/locked ☒ Functioning ☒ Routinely sampled ☒ Good condition
☒ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i e., to contain contaminant plume, minimize infiltration and gas emission, etc)

Groundwater monitoring appears to be adequate. Sampling data from 1999, 2000, 2001 indicate that Atrazine levels in the groundwter have declined to below MCLs.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy

Based on previous groundwater monitoring results, Atrazine levels in the groundwater appear to have declined to below MCLs.

C.	Early Indicators of Potential Remedy Problems
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. No potential problems were identified during the site visit/site inspection.
D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy None noted. Based on previous sampling results (1999 thru 2001), it is recommended that the groundwter monitoring be discontinued and that this be the last 5-year review.

INTERVIEW DOCUMENTATION FORM

The following is a list of individual interviewed for this five-year review. See the attached contact record(s) for a detailed summary of the interviews.

Name	Title/Position	Organization	Date
Bob Drustrup	Contaminated Sites Section	IDNR	Various
Name	Title/Position	Organization	Date
Name	Title/Position	Organization	Date
Name	Title/Position	Organization	Date
Name	Title/Position	Organization	Date
Name	Title/Position	Organization	Date
Name	Title/Position	Organization	Date

INTERVIEW RECORD

Site Name: Aidex Corporation Site		**EPA ID No.:** IAD042581256
Subject: Third Five-Year Review	**Time:** Various	**Date:** Various
Type: ☒ Telephone ☒ Visit ☐ Other **Location of Visit:**	☐ Incoming ☐ Outgoing	

Contact Made By:

Name: Genise Luecke	**Title: Site Manager**	**Organization: BVSPC**

Individual Contacted:

Name: Bob Drustrup	**Title:**	**Organization: IDNR**

Telephone No: 515/281-8900 **Fax No: 515/281-8895** **E-Mail Address:**	**Street Address: Wallace State Office Bldg.** **City, State, Zip: Des Moines, IA 50319**

Summary Of Conversation

August 28, 2003

Contacted Mr Drustrup to discuss the 2003 annual monitoring event and general site issues. Mr Drustrup indicated that the State of Iowa has reclassified the Aidex site on the State *Registry of Hazardous Waste or Hazardous Substances Disposal Sites*. The site has been reclassified as "No Further Action Required" Mr. Drustrup indicated that because of this reclassification, the site will not even appear on the 2003 registry. Mr Drustrup indicated that the State would like to discontinue the monitoring and would be in favor of this being the last 5-year review.

October 15 and 16, 2003
Mr. Drustrup indicated several times during the groundwater monitoring effort that the State feels that monitoring at this site should be discontinued.